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LTD

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## (54) OPTICAL MEMBER FOR ULTRAVIOLET LASER

### (57)Abstract:

PURPOSE: To form an optical member for an ultraviolet laser securing laser resistance and high transmissivity by using a synthetic silica glass body with high purity and high homogeneity as a starting base metal and substantially removing an O<sub>2</sub> gas incorporated in the glass body.

CONSTITUTION: This optical member for an ultraviolet laser is constituted of a synthetic silica glass body with high purity and high homogeneity incorporated with  $\geq 0$ wt.ppm OH groups, in which an O<sub>2</sub> gas incorporated in this glass body is substantially removed. For example, the synthetic silica glass body with high purity and high homogeneity is held for prescribed time in the atmosphere of an inert gas by the treatment of hot isostatic pressing(HIP), by which O<sub>2</sub> incorporated in the glass body is substantially removed. The above optical member is effective for a KrF or ArF excimer laser or a YAG four times higher harmonic (about 250nm) laser beam, but it is not limited only to the above.

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(71) Applicant: **SHINETSU QUARTZ PROD CO LTD**

(72) Inventor: **YAMAGATA SHIGERU**  
**INAGI KYOICHI**

**(54) OPTICAL MEMBER FOR ULTRAVIOLET LASER**

**(57) Abstract:**

**PURPOSE:** To form an optical member for an ultraviolet laser securing laser resistance and high transmissivity by using a synthetic silica glass body with high purity and high homogeneity as a starting base metal and substantially removing an O<sub>2</sub> gas incorporated in the glass body.

**CONSTITUTION:** This optical member for an ultraviolet laser is constituted of a synthetic silica glass body with high purity and high homogeneity incorporated

with  $\approx 10$ wt.ppm OH groups, in which an O<sub>2</sub> gas incorporated in this glass body is substantially removed. For example, the synthetic silica glass body with high purity and high homogeneity is held for prescribed time in the atmosphere of an inert gas by the treatment of hot isostatic pressing(HIP), by which O<sub>2</sub> incorporated in the glass body is substantially removed. The above optical member is effective for a KrF or ArF excimer laser or a YAG four times higher harmonic (about 250nm) laser beam, but it is not limited only to the above.

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